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EXAMINER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

MAILED

Application Number: 09/496,960
Filing Date: February 03, 2000
Appellant(s): ARNESON ET AL.

NOV 02 2007

GROUP 3600

Robert Sokohl
For Appellant

EXAMINER'S ANSWER

This is in response to the supplemental appeal brief filed October 5, 2007 appealing from the Office action mailed April 22, 2004.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Claimed Subject Matter*

The summary of invention contained in the brief is correct.

(6) *Grounds of Rejection to be Reviewed on Appeal*

The appellant's statement of the issues in the brief is correct.

(7) *Claims Appendix*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) *Evidence Relied On*

5,289,372	GUTHRIE et al	2-1994
5,856,788	WALTER et al	1-1999
3,689,885	KAPLAN et al	9-1972

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

(a) Claims 1-14, 17, 19-32, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guthrie et al (5,289,372).

Claims 1 and 19: Guthrie discloses a system and method for conducting an inventory of items with attached tags, comprising:

- a. Selecting a remote sensor (collector) to poll a plurality of tags (sensors) within the collector's physical area of control;
- b. Receiving and storing information from the polled tags;
- c. Repeating the polling by other collectors in the system; and
- d. Processing the received polling information to determine the inventory status of the system (col 3, line 50 - col 4, line 55).

Guthrie also discloses that wireless inventory systems are known but that using wireless (RF) transmissions for communicating between the tags and the collector such as in Caswell (4,636,950) is "not suitable for Federal Government facilities"...and where secrecy considerations are required" (col 3, lines 15-44). While Guthrie uses wired connections to link the tags and the collector in his invention, his disclosure that wireless transmission means are also used in other systems to communicate between the tags and collector teaches and would have rendered it obvious to one having ordinary skill in the art at the time the invention was made that wireless connections could also be used if, as Guthrie implies, secrecy requirements were not a concern. One would have been motivated to use wireless transmissions to poll the tags in

Guthrie in order to enable the invention to be used for inventorying non-electric or mobile items such as items in a storeroom.

Claims 2 and 20: Guthrie discloses a system and method for conducting an inventory of items as in Claims 1 and 19 above, and further discloses the polling information comprises at least one tag ID (col 3, line 50 - col 4, line 55). The Examiner notes that a tag ID is comprised of a plurality of bits.

Claims 3 and 21: Guthrie discloses a system and method for conducting an inventory of items as in Claims 2 and 20 above, and further discloses repeating the steps (col 3, line 50 - col 4, line 55 and col 10, lines 52-57).

Claims 4 and 22: Guthrie discloses a system and method for conducting an inventory of items as in Claims 3 and 21 above, and further discloses storing information of tags which failed to respond (missing from inventory)(col 13, lines 56-68 and col 21, line 62 - col 22, line 17).

Claims 5 and 23: Guthrie discloses a system and method for conducting an inventory of items as in Claims 4 and 22 above, and further discloses initiating a security measure upon detection that a collector or tag does not respond (is missing)(col 13, lines 56-68 and col 21, line 62 - col 22, line 17). Guthrie discloses sending maintenance personnel to fix a non-responsive collector, but does not explicitly disclose sending the same maintenance personnel if a tag is non-responsive. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to also send the maintenance personnel to fix non-functioning tags

also. One would have been motivated to do this in view of Guthrie's disclosure that information about such non-responsive tags is being stored in the database.

Claims 6, 7, 24, and 25: Guthrie discloses a system and method for conducting an inventory of items as in Claims 5 and 23 above, but does not explicitly disclose that the security action taken when a "missing" item is detected consists of turning on a surveillance camera or activating a silent alarm. Guthrie discloses that a maintenance person is dispatched to the "nonresponsive" collector (col 13, lines 56-68) or information about a non-responsive tag is entered in the Disconnect Table (col 14, lines 55-68 and col 21, line 62 - col 22, line 17). While this may be an appropriate response when applied to Guthrie's example system that is tracking the equipment in a widely distributed computer system, it would have been obvious to one having ordinary skill in the art at the time the invention was made to turn on a surveillance camera, activate an alarm (whether silent or not), or take other security measures such as locking all egresses into and out of the area concerned. These are all well known types of measures taken by the security industry when a security abnormality is detected. For example, Automatic Teller Machines (ATMs) have been in widespread use throughout the world for many years. These financial transaction machines use surveillance cameras to record an image of the person conducting the financial transaction on the ATM. However, in order to reduce the amount of memory needed to store the images the camera is not kept running constantly, but is only activated when the system detects the presence of a user. Many of the ATMs will also automatically transmit an alarm signal to the local security agency or police department when an inappropriate

transaction situation is detected (such as coercion of a user by another). The type of security action taken would depend upon the type of items being monitored. While in most computer systems Guthrie's sending of maintenance personnel may be appropriate such as when a malfunction of the ATM is detected, if the computer system was a highly sensitive classified system used by an intelligence organization or the military, it would be more appropriate to turn on a surveillance camera or to activate a silent alarm instead of sending maintenance (or security) personnel in order to verify the reason for the non-responsiveness of the item and to determine the appropriate response (i.e. sending maintenance personnel if the item is seen to be present or sending security personnel if the item is seen to be missing from its usual place or unauthorized personnel are present).

Claims 8 and 26: Guthrie discloses a system and method for conducting an inventory of items as in Claims 2 and 20 above, and further discloses correlating the information received from each tag to maintain data regarding the location of each tag (col 3, line 50 - col 4, line 55).

Claims 9 and 27: Guthrie discloses a system and method for conducting an inventory of items as in Claims 1 and 19 above, and further discloses that the information is from a tag within the collector's coverage pattern (col 3, line 50 - col 4, line 55).

Claims 10-14 and 28-32: Guthrie discloses a system and method for conducting an inventory of items as in Claims 9 and 27 above, but does not explicitly disclose that the sensor information indicates tag movement, tag vibration, tag temperature, or a

security breach comprising one of these parameters. Official Notice is taken that it is old and well known in the security arts to use motion, vibration, and/or temperature sensors to detect theft, abuse, or failure of an item. These types of sensors are used in many areas, such as car alarms (motion and vibration); factories, buildings heating/cooling systems, nuclear power plants (temperature); etc. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to monitor movement, vibration, and/or temperature fluctuation of the tagged item. One would have been motivated to monitor these types of elements in order to better determine when an exception status has occurred so the appropriate response could be initiated.

Claims 17 and 35: Guthrie discloses a system and method for conducting an inventory of items as in Claims 1 and 19 above, but does not explicitly disclose that the tag reader is a PCMCIA card. The Examiner notes that a PCMCIA card is the common standard used on PC card-based peripherals on portable (and personal) computers throughout the industry and is also the standard name for PC cards which were first introduced in June 1990. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a PCMCIA card to read the tags. One would have been motivated to use a PCMCIA card in view of its standard usage for such applications throughout the industry.

(b) Claims 15, 18, 33, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guthrie et al (5,289,372) in view of Kaplan et al (3,689,885).

Claims 15, 18, 33, and 36: Guthrie discloses a system and method for conducting an inventory of items as in Claims 1 and 19 above, but does not explicitly disclose that the tags are connected to the collector through an electrical power distribution system nor attached to an electrical light fixture. Kaplan discloses a similar system and method for polling tags in which the nodes are connected through an electrical power distribution system (Figure 5A, item 172 and col 9, lines 39-62). While Kaplan does not explicitly disclose connecting to the electrical power distribution system through an electrical lighting fixture, Official Notice is taken that it is old and well known in the electrical arts that items can be connected to an electrical system by direct wiring, outlet plugs, or through light fixtures (the Examiner has used a motion sensor integrated into a light fixture to activate outdoor lighting on his house for years). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to connect the collectors, tags, and other system components through an electrical power distribution system and to use one or more of the usual electrical connection modes to include an electrical lighting fixture. One would have been motivated to connect to such a system in such a manner in order to provide a constant supply of power without needing to replace batteries constantly.

(c) Claims 16, 34, 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guthrie et al (5,289,372) in view of Walter (5,856,788).

Claims 16, 34, 37 and 38: Guthrie discloses a method and system for conducting an inventory of items as in Claims 1 and 19 above, but does not explicitly disclose the

time slot contention is resolved by the tag sending a first plurality of bits of its ID number during a first read and a second plurality of bits during a second read. Walter discloses a similar method and system for wirelessly interrogating identification tags in which each tag transmits a first bit of its identification number during a first read and then subsequent bits during subsequent reads if there was time slot contention during the previous read (col 5, lines 1-50). While it is not explicitly disclosed that a plurality of bits are read each time, it would have been obvious to one having ordinary skill in the art at the time the invention was made that in order to use different parts of the identification number for multiple reads, the identification number could be divided into subsets containing any number of bits from only one bit as Walter discloses to any number less than the total number of bits. One would have been motivated to use a plurality of bits in order to decrease the time it takes to identify a plurality of items when the identification number consists of a large number of bits. For example, if the identification numbers of 100 items each contains 88 bits, it would take approximately 8,800 reads to identify all 100 items reading one bit at a time. If 4 bits (one byte) at a time were read, it would only take approximately 1,100 reads to identify all 100 items, thus realizing an 8-fold decrease in processing time. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use such a bitwise interrogation (using a plurality of bits per read) of the tags in Guthrie to resolve time slot contention. One would have been motivated to use bitwise interrogation in view of Guthrie's disclosure of reading in eight bits of the tag ID at a time until all 26 bits have been received (col 10, lines 5-25).

(10) Response to Argument

(a) Ground A. Rejection of claims 1-14, 17, 19-32, and 35 under U.S.C. 103 over U.S. Patent No. 5,289,372 to Guthrie et al.

The Appellant argues that Guthrie does not teach or suggest "the selected remote access sensor module comprises a *coverage pattern that defines a physical area* containing a plurality [of] items with their associated tags" (page 9). It is argued that "because the collectors can only receive data from sensors that are physically connected thereto, the collectors taught by Guthrie do not provide a 'coverage pattern' as defined in the Appellant's invention or as the term is well understood in the wireless community". The Examiner notes that the following response to this argument was provided in the Response to Arguments Section of the Final Rejection:

"The Applicant argues that Guthrie does not disclose "a coverage pattern that defines a physical area containing a plurality of items with their associated tags" (pages 14-15). The Examiner notes that Guthrie has a plurality of collectors, each of which has a certain number of assigned tags for which it is responsible to poll (inventory). Guthrie uses an example of where "Collectors 19 are located in each room of a multi-room building, for example, and every sensor 18 in a room connects to this collector 19" (col 8, lines 6-8). In other words, each collector only polls the sensor located within its room - - its "coverage pattern". Guthrie further discloses that each building (of a plurality of buildings) has at least one concentrator which receives the data from each of the collectors within its building and forwards the data to the central computer (col 8, lines

44-64). Hence, each concentrator also has its own Acoverage pattern". The Examiner also notes that in wireless systems it is inherent that the collector would have a finite coverage area based on the power of its (and the tags) transceiver, such as discussed by Walter. Therefore, whether wired (which strictly limits its coverage pattern) or wireless (in which its coverage pattern is limited by the power of the transceivers), Guthrie's collectors would all have assigned coverage patterns." In Walter, this coverage pattern is called a "field of interrogation".

The Appellant also argues that "There is no suggestion or motivation to modify Guthrie to obtain a system for and method of conducting a wireless inventory" (page 10); and that Guthrie teaches away from "conducting a wireless inventory" (page 11). The Examiner notes that this argument was also addressed as follows in the Response to Argument Section of the Final Rejection:

"Applicant argues in reference to Claims 1 and 19 that Guthrie does not disclose Aconducting a **wireless** inventory of items" and that Guthrie teaches away from a "method and system for conducting a wireless inventory" (pages 15-16). The Examiner notes that as discussed in the rejection above, while Guthrie uses a wired system as an exemplary embodiment of his invention, he also discloses that other systems use wireless RF transmissions when security is not an issue. Thus, the reference explicitly teaches that an inventory monitoring system may be **either** wired or wireless. When a reference discloses a plurality of known methods and then uses one of the methods which the inventor prefers over the other, the reference does not "teach away" from the unpreferred method, but rather shows that there is a plurality of known methods from

which one may choose. In Celeritas Technologies Ltd. v. Rockwell International Corp. 150 F.3d 1354, 1361, 47 USPQ2d 1516, 1522-23 (Fed. Cir. 1998), the court held that "The fact that a modem with a single carrier data signal is shown to be less than optimal does not vitiate the fact that it was disclosed". Likewise, In re Susi, 440 F.2d 442, 169 USPQ 423 (CCPA 1971) stated that "Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or non-preferred embodiments". The Examiner also notes in response to the "inventory" argument that Guthrie explicitly discloses that the tag readings are used to determine if any of the items have been moved or are no longer detectable by the collector, i.e. missing. Once the collector has completed its polling of the sensors within its area of responsibility it responds to the central computer with a report of "good health" or with the detected changes (col 10, lines 15-40). Thus, by determining which items have been moved or are no longer detectable, Guthrie is "inventorying" the items. He determines that an item is missing from the "inventory" by detecting upon receipt of the tag ID numbers that a Tag ID number contains all zeros, which means no response was received from that tag." The Examiner further notes that Walter explicitly discloses conducting just such a wireless inventory was known several years before the priority date of the present application. Guthrie also discusses a patent filed in 1985 and issued to Caswell, which conducts inventories using RF transmissions (col 3, lines 15-44). Therefore, it would have been obvious to one having ordinary skill in the art to use wireless communication means, such as RF, IR, or microwave transceivers, in place of the wired connections in Guthrie in order, if for no other reason, to decrease the congestion of wires running

throughout each room, which has been a problem in the art for many years. For example, Guthrie's example of having 32 sensors connected to one collector (all within one room) would require a maze of 32 wires be run around, over, under, or through the room to connect to each of the 32 items being inventoried. While it is physically possible to have 32 wires running to all the items, one of ordinary skill would have easily recognized the advantage of using wireless transponders in order to prevent users and mobile equipment from tripping over, getting entangled in, or breaking the myriad of wires.

The Appellant also argues that Guthrie would be rendered unsatisfactory for its intended purpose if wireless connections were used in that the collector "would have no method of associating a received bit with a particular transmitting sensor" (page 12). The Examiner notes that Guthrie is not identifying the sensor based on which wire the reply was received. If so, there would be no reason to repeat the request and reply for the other bits of the sensor ID number as the Appellant has pointed out happens in Guthrie. Just the fact that a response was received over that particular wire would be enough to determine whether or not the sensor was still attached thereto. Thus, the Appellant's argument is not consistent with his own discussion of the reference. The "load pulse" sent out by the collector in Guthrie could just as easily be a wireless pulse signal to each sensor within the room, since it is used to "wake up" the sensors to begin transmission of their ID numbers.

Finally, the Appellant argues that the Examiner has used inappropriate hindsight to modify Guthrie to obtain the claimed invention (pages 12-13) because the

reference "does not teach or suggest all the claim limitations". The Examiner notes that it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). The Appellant argues that the Examiner used hindsight to reject the claimed invention since it would be illogical to conduct an inventory in the wired environment of Guthrie because an inventory "implies items being flexibly removed from and/or added to an area where the inventory is being conducted". First, the Examiner notes that an inventory can be conducted on fixed items as well as flexible (portable) items. For example, an oil company can make an inventory of its oil wells or a company can make an inventory of the various parcels of land it owns.

Notwithstanding the fact that inventories can be made of fixed as well as non-fixed items, in the present invention Guthrie discloses a system for inventorying computer components which may be readily removed or added to the system, i.e. flexible. As argued in the preceding paragraphs, it would have been obvious to replace at least some of the wired connections with wireless connections. Even without the other cited references, one of ordinary skill in the art would have realized situations in which wireless connections were more suitable. For example, in a stenographer pool in an organization in which 40-50 stenographers share the same large room, a system using wired connections would have posed a safety hazard to the workers who would have to

maneuver around the myriad of wires running across the floor. Anyone having even rudimentary skill in system design would have realized the benefits of using wireless communications connections in that instance. The other cited prior art reinforce this by showing that such wireless inventory systems were known well before the filing data of the present application.

(b) Ground B. Rejection of claims 16, 34, 37, and 38 under 35 U.S.C. 103 over Guthrie et al in view of Walter, U.S. Patent No. 5,856,788.

The Appellant argues the Examiner's reasoning on why it would have been obvious to modify Guthrie to read more than one bit at a time (Page 15). Specifically, the Appellant cites *In re Soli* that "the Examiner must provide specific findings predicated on sound technical and scientific reasoning to support his or her condition of common knowledge". The Examiner notes that Kaplan shows the wireless tag sends a 16-bit code signal of which the first 8 bits are for synchronization and the last 8 bits are part of the identification code of the tag. This reference was issued in 1972, over 30 years before the present invention. Thus, sending a plurality of bits instead of only one at a time was well known for a substantial period of time prior to the present invention. Furthermore, the example was given in the rejection by the Examiner in support of the motivation of using a plurality of bits ("to decrease the time it takes to identify a plurality of items when the identification number consists of a large number of bits"). This motivation has been the driving factor in many areas of computer research throughout the development of computers. Researchers are constantly looking for ways to improve "throughput" in computer systems and applications and have developed such things as

parallel processing to enable a computer system to process a plurality of data at the same time. Therefore, one of ordinary skill in the art would have been motivated to look for a quicker way of processing wireless tag identification numbers, such as reading two, three, four, or more bits at a time instead of only one at a time as in the given example.

The Appellant also argues against the Examiner's assertion that "it is the steps of the claims which are being examined, not the terminology used by the Applicant" when responding to the Appellant's allegation that Guthrie did not disclose all the words in the claims. the following is a copy of the Examiner's response:

"The Applicant argues in reference to Claims 16 and 34 that the Examiner has not established prima facie obviousness because "all the words in the claims must be considered" (page 18). The Examiner notes that while the Applicant is free to express the claim in as many words as he wishes, it is the steps of the claims which are being examined, not the terminology used by the Applicant. Whether the device that receives the identification number from the tag is called a tag reader (Applicant) or collector (Guthrie), it is still a device which performs the same function. In these claims the tag reader transmits a wake-up signal and a timer signal; each tag receives the timer signal and responds with its tag ID; the reader receives the responses from the tags, increments a data store (first reader count) when there is a time slot contention, and transmits a second timer signal along with the first reader count; each responding tag receives the second signal and transmits a second number back to the reader. In Guthrie the collector (reader) transmits a wake-up signal (initial GETS ID call) along with

a software timer signal; each tag receives the signals and responds with the first eight bits of data from its tag ID; the collector receives and stores this data (first reader count) then requests the next bit(s) from each tag and repeats the process until all 26 bits of each sensor ID number is read. Thus, Guthrie not only discloses all the components used in the present Claims 16 and 34 (but with different names), but also discloses the transmitting, receipt, storage, and comparison steps of the claimed method. In view of the addition of the feature of a second plurality of bits being transmitted to these claims, Claims 16 and 34 have presented been rejected together with Claims 37 and 38 in which this feature was previously rejected."

As per the Appellant's argument that Claims 16 and 34 recite using a first and second number (page 20), the Examiner notes that the claims recite a first and second portion of the same number being transmitted, not two separate numbers. The parent application was allowed by the Examiner for its disclosure and claim limitation of having two separate identification numbers on the tags and transmitting the first in response to the first signal and the second in response to a second signal. This novel feature of having two separate numbers stored on the tag has been removed from the claims in the present application and is not in Claim 16, Claim 34, or any of the other pending claims, thus the Appellant's argument is moot.

The Appellant's argument in reference to Claim 37 and 38 (page 20) that "the notion of time slot contention is illogical" in Guthrie because it only pertains to a wired system has been addressed in the preceding paragraphs. Time slot contention, i.e. when two or more tags respond at the same time to the same signal, is just as possible

in a wired system as in a wireless system. Guthrie addresses this very issue and overcomes it by inactivating non-matching tags, sending a second signal to the remaining tags, and repeating the inactivating and signaling steps until only one tag responds to the signal.

(c) Ground C. Rejection of claims 15, 18, 33, and 36 under 35 U.S.C. 103 over Guthrie in view of Kaplan et al, U.S. Patent No. 3,689,885.

The Appellant's argument in reference to the above claims is that they depend upon Claims 1 and 19 and, thus, are allowable for the same reasons cited for the parent claims above. The Examiner notes that these claims also include limitations as to how the sensor are attached to the electrical distribution system (e.g. connected through a light fixture). In the final rejection the Examiner cited Kaplan as disclosing connecting through an electrical power distribution system and took Official Notice about connecting through an electrical lighting fixture. The Appellant's lack of argument of these features implies acceptance that these types of electrical connection means were known prior to the present invention.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

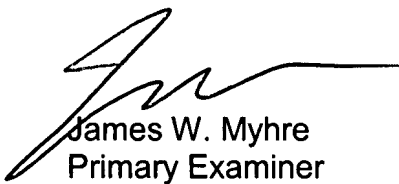
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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

JWM
October 29, 2007


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